



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

ST

| APPLICATION NO.                                                                             | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 08/987,380                                                                                  | 12/09/1997  | MASAO INOUE          | Q48500              | 6198             |
| 7590                                                                                        | 07/13/2006  |                      | EXAMINER            |                  |
| SUGHRUE MION ZINN MACPEAK & SEAS<br>2100 PENNSYLVANIA AVENUE NW<br>WASHINGTON, DC 200373202 |             |                      | WANG, SHENGJUN      |                  |
|                                                                                             |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                             |             |                      | 1617                |                  |

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

MAILED  
JUL 13 2006  
GROUP 1600

MAILED  
JUL 11 2006  
GROUP 1600

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 08/987,380

Filing Date: December 09, 1997

Appellant(s): INOUE ET AL.

---

John T. Callahan  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 3, 2006 appealing from the Office action mailed

March 8, 2005.

**(1) (1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

|                     |               |                    |
|---------------------|---------------|--------------------|
| US Patent 4,772,490 | Kogler et al. | September 20, 1988 |
| WO 93/04017         | Burger et al. | March 3, 20, 1993  |
| CA 2115998          | Burger et al. | July 29, 12003     |
| WO 91/10362         | Tocker        | July 25, 1991      |

**(9) Grounds of Rejection**

*Claims Rejections 35 U.S.C. - 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5 -7, 10, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocker (WO 91/10362 of record) in view of Burger et al. (WO 93/04017, CA 2115998 is an English equivalent) and Kogler et al. (US Patent 4,772,490, of record).

Tocker teaches a pesticidal granule composition coated with polyurethane. See, particularly, page 2, line 23-31. The polyols employed has at least two hydroxyl groups and the polyisocyanate has at least one isocyanate substituent (-NCO). See, particularly. Page 4, lines 1-30. The amount of polyisocyanate employed is about 1-20% by weight, and the reaction temperature is at ambient temperature or above. The coating procedure can be carried out stepwise. See, particularly, page 5, line 5-22. Tocker further teaches that, as required by some practice, e.g., slow release of the active component, monomers containing more isocyanate or

hydroxyl group may be employed to increase the degree of cross-link in polyurethane. See, particularly, page 10, lines 16-24. The polyisocyanate employed therein are, for example, triisocyanato toluene, 1,5-naphthalene diisocyanate, etc. the polyols employed therein are, for example, glycerin, glycol or other polyhydric alcohols. See, particularly, page 4, lines 3-30.

Tocker does not teach expressly the employment of the particular procedure herein for making the coating wherein the polyols and polyisocyanate are mixed before the application to the granules.

However, Burger et al. teach that the particular procedure herein, i.e., mixing the polyol and polyisocyanate before applying them to the granules, is known for coating agrochemical granules for forming multiple layers of polyurethane coating. The coating made by such procedure are known to be with sufficient homogeneity of the individual particle coating, and be physically stable, resistant to frost and provide sustained release of active ingredients. See, particularly, the abstract, page 1, the examples and the claims. Kogler et al. also teaches method of coating granular agrochemicals with polyurethane for controlled release of active ingredients, wherein polyisocyanate and polyols are premixed. See, particularly, the abstract, examples 2-5 in columns 5 and 6. The coating's properties may be manipulated by using different polyols and different isocyanates. See, particularly, column 2, line 49 bridging column 3, line 29.

Therefore, it would have been *prima facie* obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to modify the pesticidal granules of Tocker by mixing the polyols and polyisocyanates first followed by coating the mixture to the granules.

A person of ordinary skill in the art would have been motivated to make such modification because the modification will lead to a stable, controlled releasing coating.

Regarding claims 5, 7, 10,11 and 13 which recited water absorption ratio of the polyurethane is not more than 5%, it is noted that the reference and the instant application are employing the essentially the same polyols and polyisocyanates. See, pages 13-14 in the specification and page 4 in Tocker. Therefore, the polyurethane coating of Tocker is reasonably expected to have the same water absorption ratio as claimed herein. Further, the optimization the properties of the coating accordingly by using different isocyanate or polyol is considered within the skill of artisan, as discussed by Tocker et al. (cross link degree) and Kolger et al. (different polyol and isocyanate).

#### **(10) Response to Argument**

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Particularly, in view of the cited references as a whole, the claimed method would have been obvious to one of ordinary skill in the art. Applicants have argued that Tucker et al. particular teach polyol in the granules therefore combination with other references to arrive the claimed invention would fundamentally change of Tucker's invention. The arguments are not persuasive. Applicants' attention is directed to "Background of the invention" in Tucker et al. wherein Tucker et al. disclosed that methods similar to those herein claimed are known in the art (i.e., using mixture of polyols and polyisocyanate), and state that the method therein is much more *versatile and convenient* than the known methods with respect of the process. See page 1-2. The method disclosed by Tucker et al. does not provide any advantage as to the properties. Burger and Kogler et al. teaches the

method for improving the properties. Therefore, it would have been obvious to one of ordinary skill in the art to combine the cited references, and take some of the advantages with respect to the properties disclosed in the prior art, while give up some of the advantage in process. It is noted that the claimed method may not be as convenient as those disclosed by Tucker et al. However, it has been held that "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the teaching, suggestion and motivation are found in the cited references and in the knowledge generally available to one of ordinary skill in the art. Particularly, Tocker teaches that controlled release granulated pesticidal composition coated with polyurethane is known, Burger et al. and Kogler et al. teaches that using polyurethane coating as a means for controlled release of active ingredients in agrichemical application is well-known, and the method of coating herein employed is also known. Therefore, employment of an old coating method for making controlled release pesticidal composition would have been obvious.

Appellants further argue that in combination of the cited prior art would change "[t]he principle of operation of the prior art invention being modified, then the teachings of the

references are not sufficient to render the claims *prima facie* obvious." The arguments are unpersuasive. Note Tocker teaches a simplified, and more versatile and convenient process of coating polyurethane. Tocker does not teach the properties of the coating. Burger et al. and Kogler et al. teaches polyurethane coating as herein claimed provide better properties. Therefore, the instant claimed composition would have been obvious to one of ordinary skill in the art. Further, one of ordinary skill in the art would have understood that the claimed composition here would have better properties, but need some tedious coating process. As discussed above, "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

As to the physical properties of the coating recited in claims 5, 7, 10, 11 and 13 which recited water absorption ratio of the polyurethane is not more than 5%, it is maintained that the references and the instant application are employing the essentially the same polyols and polyisocyanates. See, pages 13-14 in the specification and page 4 in Tocker. Therefore, the polyurethane coating of Tocker, or as suggested by the cited references, is reasonably expected to have the same water absorption ratio as claimed herein. Further, the optimization the properties of the coating accordingly by using different isocyanate or polyol is considered within the skill of artisan, as discussed by Tocker et al. (cross link degree) and Kolger et al. (different polyol and isocyanate). Appellants err in stating the raw material in examples 3 and 5 herein are the same. In fact they are different at least in the aspect of polyol employed. Example 3 employs 135 parts of polymeric MDI (isocyanate) and 486 parts of trifunctional polypropylene glycol (polyol). The ration of isocyanate:polyol is about 1:3.5, and all polyol are trifunctional, which

lead to cross-link. Example 5 employs 35.8 part of polymeric MDI (isocyanate), 31.1 parts of trifunctional polypropylene glycol, and 31.1 parts of difunctional polypropylene glycol. (See, pages 33-35 in the specification). Therefore, the two polyurethanes are different as to amount of polyol, and the kind of polyol, and therefore are different in term of crosslink See, Tocker et al. (cross link degree) and Kolger et al. (different polyol and isocyanate).

Appellants further contend that a *prima facie* case of unexpected results has been established and the unexpected results are sufficient to rebut the *prima facie* obviousness. The examiner disagrees. It is well established that “The evidence relied \*>upon< should establish “that the differences in results are in fact unexpected and unobvious and of both statistical and practical significance.” *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Inter. 1992). See also MPEP 716.02(b). Burger et al. teach that the particular procedure herein, i.e., mixing the polyol and polyisocyanate before applying them to the granules, is known for coating agrochemical granules for forming multiple layers of polyurethane coating. The coating made by such procedure are known to be with sufficient homogeneity of the individual particle coating, and be physically stable, resistant to frost and provide sustained release of active ingredients. See, particularly, the abstract. page 1, the examples and the claims. Kogler et al. also teaches method of coating granular agrochemicals with polyurethane for controlled release of active ingredients, wherein polyisocyanate and polyols are premixed. See, particularly, the abstract, examples 2-5 in columns 5 and 6. The coating’s properties may be manipulated by using different polyols and different isocyanates. See, particularly, column 2, line 49 bridging column 3, line 29.

The declaration under 37 CFR 1.132 filed January 28, 2004 has been fully considered, but found insufficient to overcome the rejection of claims 1-3, 5 -7, 10, 11 and 13 based upon Tocker in view of Burger et al. and Kogler et al. as set forth in above because: the declaration does not provide sufficient evidence to rebut the rejections set forth above. Particularly, applicants, based their own experiments, contend that the claimed invention is better than those disclosed by Tocker. This alone cannot be sufficient to overcome the rejections since the rejections are based on the combination of cited references. In fact the advantages applicants asserted are fairly suggested by the cited references, e.g., the coating be with sufficient homogeneity of the individual particle coating, and be physically stable, resistant to frost and provide sustained release of active ingredients. See the discussion above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Shengjun Wang   
SHENGJUN WANG  
PRIMARY EXAMINER

Conferees:

Sreeni Padmanabhan

San-ming Hui

  
SREENI PADMANABHAN  
SUPERVISORY PATENT EXAMINER

  
SAN-MING HUI  
PRIMARY EXAMINER